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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/028,108	12/20/2001	Ching-Pang Lee	13DV14203	3092

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FRANCIS L. CONTE, ESQ.  
6 PURITAN AVENUE  
SWAMPSCOTT, MA 01907

EXAMINER

MCNEIL, JENNIFER C

ART UNIT	PAPER NUMBER
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1775

DATE MAILED: 12/12/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Applicati n N .

10/028,108

Applicant(s)

LEE ET AL.

Examin r

Jennifer C McNeil

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-- The MAILING DATE of this communication appears n the c ver sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 29 September 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 22 and 23 is/are allowed.
- 6) ☒ Claim(s) 1-11 and 14-21 is/are rejected.
- 7) ☒ Claim(s) 12 and 13 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 2, 4, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Scheurlen (US 6,039,537) in view of Chung et al (US 6,478,535). Scheurlen teaches a turbine blade with bores through a metal wall. Scheurlen shows a cross-section having bores closed by the heat-insulating layer system. Scheurlen does not show the entire blade with additional holes present. Chung teaches a turbine blade having bores or channels therein. As shown in Figure 4, multiple channels (20) are provided in the walls. Another view of the channels is shown in Figure 1, which shows multiple channels spaced closely together in a uniform pattern. As it is shown by Chung that a turbine blade with wall channels may be provided closely spaced together to provide the desired cooling of the vane, so would it be obvious to one of ordinary skill in the art to form the channels of Scheurlen in a manner similar to that of Chung to provide cooling of the vane. One of ordinary skill in the art would also recognize that the cross-section of Scheurlen does not show the additional channels that are provided in the conventional manner, which would be evident in a side view of the blade, as displayed by Chung.

Regarding claim 4, a bond coat may be provided.

Regarding claim 19, the metal wall may be in the form of a blade.

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*Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 5-11, 14-18, 20, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Scheurlen (US 6,039,537) and Chung et al (US 6,478,535) as applied to claim 1 above, and further in view of Bruce (US 6,210,488). Please see the previous office action.

*Allowable Subject Matter*

Claims 22 and 23 are allowed.

Claims 12 and 13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

*Response to Arguments*

Applicant's arguments and amendments have overcome the rejection of Beeck.

Applicant's amendments have overcome the double patenting rejection over Lee '762.

Regarding Scheurlen, Applicant argues that the bores are not analogous in structure, function, performance or purpose with that of applicant's claims. Applicant continues to argue that the pores and film cooling holes have different configurations, different functions, different performance and different purpose. The purpose, performance, and function of the bores does not structurally define them over the

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prior art. The bores meet the structural limitations of the claims, and because of this are also considered to reduce the temperature of the interface between the wall and the coating.

Applicant's argument that the pores in the instant claims are different from cooling holes is not considered commensurate because there are no additional types of holes in the claims, and there is nothing structural in the claims to define them over the bores of Scheurlen. Applicant states that the pores of the instant claims must be different than cooling holes by conventional negative implication practice in interpreting claims 12 and 13. Applicant's attention is brought to the fact that these two claims were and are indicated as being allowable.

Independent claim 1 recites pores that are "minute". The term "minute" is taken from the specification as small in comparison to the cooling holes of applicant's article. Stating that the pores are minute does not limit the claims to pores that are not cooling holes. There is only one type of pore or bore in the independent claims, and the bores of Scheurlen are considered to meet the structural limitation of these holes. The bores of Scheurlen are considered "minute", are closed by the thermal barrier coating, and as discussed above, when taken with Chung, are uniformly distributed.

Applicant's argument that the figures of Scheurlen illustrate a single bore. Applicant's attention is brought to the new 103 rejection which addresses this argument.

### *Conclusion*

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory

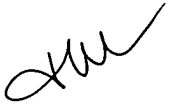
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action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer C McNeil whose telephone number is 703-305-0553. The examiner can normally be reached on 9AM-6PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Deborah Jones can be reached on 703-308-3822. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.



JCM  
December 10, 2003